

CONTAINS NO CBI



Form Approved
OMB No. 2010-0019
Approval Expires 12-31-89

EPA-OTS



000611699W

90-890000624

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Comprehensive Assessment Information Rule

REPORTING FORM

RECEIVED
EPA-OTS
41 SEP 5 11 51 AM '89

When completed, send this form to:

Document Processing Center
Office of Toxic Substances, TS-790
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460
Attention: CAIR Reporting Office

For Agency Use Only:

Date of Receipt: _____

Document
Control Number: _____

Docket Number: _____

SECTION 1 GENERAL MANUFACTURER, IMPORTER, AND PROCESSOR INFORMATION

PART A GENERAL REPORTING INFORMATION

1.01 This Comprehensive Assessment Information Rule (CAIR) Reporting Form has been completed in response to the Federal Register Notice of..... 12 22 88
CBI mo. day year

☐ a. If a Chemical Abstracts Service Number (CAS No.) is provided in the Federal Register, list the CAS No. 000584-84-9

b. If a chemical substance CAS No. is not provided in the Federal Register, list either (i) the chemical name, (ii) the mixture name, or (iii) the trade name of the chemical substance as provided in the Federal Register.

(i) Chemical name as listed in the rule NA

(ii) Name of mixture as listed in the rule NA

(iii) Trade name as listed in the rule NA

c. If a chemical category is provided in the Federal Register, report the name of the category as listed in the rule, the chemical substance CAS No. you are reporting on which falls under the listed category, and the chemical name of the substance you are reporting on which falls under the listed category.

Name of category as listed in the rule NA

CAS No. of chemical substance - -

Name of chemical substance NA

1.02 Identify your reporting status under CAIR by circling the appropriate response(s).

CBI Manufacturer 1

☐ Importer 2

Processor 3

X/P manufacturer reporting for customer who is a processor 4

X/P processor reporting for customer who is a processor 5

☐ Mark (X) this box if you attach a continuation sheet.

1.03 Does the substance you are reporting on have an "x/p" designation associated with it in the above-listed Federal Register Notice?

CBI

Yes ☒ Go to question 1.04

☐

No ☐ Go to question 1.05

1.04 a. Do you manufacture, import, or process the listed substance and distribute it under a trade name(s) different than that listed in the Federal Register Notice? Circle the appropriate response.

CBI

Yes 1

☐

☒ No 2

b. Check the appropriate box below:

☐ You have chosen to notify your customers of their reporting obligations

Provide the trade name(s)

☐ You have chosen to report for your customers

☐ You have submitted the trade name(s) to EPA one day after the effective date of the rule in the Federal Register Notice under which you are reporting.

1.05 If you buy a trade name product and are reporting because you were notified of your reporting requirements by your trade name supplier, provide that trade name.

CBI

Trade name Stepanfoam G 302 T

☐

Is the trade name product a mixture? Circle the appropriate response.

☒ Yes 1

No 2

1.06 Certification -- The person who is responsible for the completion of this form must sign the certification statement below:

CBI

☐ "I hereby certify that, to the best of my knowledge and belief, all information entered on this form is complete and accurate."

Thomas X. Tsirimokos
NAME

Thomas X. Tsirimokos
SIGNATURE

8/31/89
DATE SIGNED

Senior Staff Attorney
TITLE

(603) 885-4556
TELEPHONE NO.

☐ Mark (X) this box if you attach a continuation sheet.

1.07 Exemptions From Reporting -- If you have provided EPA or another Federal agency with the required information on a CAIR Reporting Form for the listed substance within the past 3 years, and this information is current, accurate, and complete for the time period specified in the rule, then sign the certification below. You are required to complete section 1 of this CAIR form and provide any information now required but not previously submitted. Provide a copy of any previous submissions along with your Section 1 submission.

CBI

☐

"I hereby certify that, to the best of my knowledge and belief, all required information which I have not included in this CAIR Reporting Form has been submitted to EPA within the past 3 years and is current, accurate, and complete for the time period specified in the rule."

Not Applicable

NAME

SIGNATURE

DATE SIGNED

TITLE

()

TELEPHONE NO.

DATE OF PREVIOUS
SUBMISSION

1.08 CBI Certification -- If you have asserted any CBI claims in this report you must certify that the following statements truthfully and accurately apply to all of those confidentiality claims which you have asserted.

CBI

☐

"My company has taken measures to protect the confidentiality of the information, and it will continue to take these measures; the information is not, and has not been, reasonably ascertainable by other persons (other than government bodies) by using legitimate means (other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding) without my company's consent; the information is not publicly available elsewhere; and disclosure of the information would cause substantial harm to my company's competitive position."

Not Applicable

NAME

SIGNATURE

DATE SIGNED

TITLE

()

TELEPHONE NO.

☐ Mark (X) this box if you attach a continuation sheet.

1.09 Facility Identification

CBI Name [S][A][N][D][E][R][S][][A][S][S][O][C][I][A][T][E][S]-[H][U][D][S][O][N][][][]
[][] Address [2][0][][E][X][E][C][U][T][I][V][E][][D][R][I][V][E][][][][][][][][][][]
Street
[H][U][D][S][O][N][][][][][][][][][][][][][][][][][][][]
City
[N][H][][0][3][0][5][7]--[][][][][]
State Zip
Dun & Bradstreet Number[0][0]-[8][2][4]-[2][0][6][7]
EPA ID Number[][][][][][][][][][]
Employer ID Number[2][0][2][3][0][8][7][2]
Primary Standard Industrial Classification (SIC) Code[3][6][9][9]
Other SIC Code[3][6][7][2]
Other SIC Code[][][][][]

CBI Name [S][A][N][D][E][R][S] [A][S][S][O][C][I][A][T][E][S] - [N][H][Q] [] [] []
[] Address [D][A][N][I][E][L] [W][E][B][S][T][E][R] [H][W][Y] [S][O][U][T][H] []
Street
[N][A][S][H][U][A] [] [] [] [] [] [] [] [] [] [] [] [] [] []
City
[NH] [03061] -- [0868]
State Zip
Dun & Bradstreet Number [00]-[824]-[2067]
Employer ID Number [20230872]

6

Step. G3027 And 3A

1.11 Parent Company Identification

CBI Name [Z][O][C][K][H][E][E][D]-[C][O][R][P][O][R][A][T][I][O][N]--
[] Address [4][5][O][O]-[P][A][R][K]-[G][R][A][M][M][A][N][A]-[B][L][Y][D]
Street
[C][A][L][A][B][A][S][A][S]-
City
[C][A] [9][I][3][9][7]--[0][3][3][0]
State Zip
Dun & Bradstreet Number[0][0]-[8][2][5]-[3][2][8][3]

1.12 Technical Contact

CBI Name [J][A][M][E][S][][A][][K][O][H][L][E][R][][][][][][][][][][][][][][][][]
[][] Title [M][G][R][][P][R][I][V][I][T][Y][R][O][N][M][E][N][T][A][L][][A][F][F][A][I][R][S][][][][][][][][][][][][][][][][]
Address [9][5][][C][A][N][A][L][][S][T][R][E][E][T][][][][][][][][][][][][][][][][]
Street
[W][A][S][H][I][N][G][T][O][N][][][][][][][][][][][][][][][][]
City
[N][H][][0][3][0][6][1]--[2][0][0][4]
StateZip
Telephone Number[6][0][3]-[8][8][5]-[3][8][7][8]

1.13 This reporting year is from [01] [88] to [12] [88]
Mo. Year Mo. Year

☐ Mark (X) this box if you attach a continuation sheet.

Not Applicable

Street

City

State

Zio

Mo.

Day

Year

Telephone Number[] [] []-[] [] []-[] [] [] []

Not Applicable

Street

City

State

Zip

Mo.

Day

Year

Telephone Number[] [] []-[] [] []-[] [] [] []

8

1.16 For each classification listed below, state the quantity of the listed substance that was manufactured, imported, or processed at your facility during the reporting year.

CBI

<u>Classification</u>	<u>Quantity (kg/yr)</u>
Manufactured	<u>Not App.</u>
Imported	<u>Not App.</u>
Processed (include quantity repackaged)	<u>2.7 Kg.</u>
Of that quantity manufactured or imported, report that quantity:	
In storage at the beginning of the reporting year	<u>Not App.</u>
For on-site use or processing	<u>Not App.</u>
For direct commercial distribution (including export)	<u>Not App.</u>
In storage at the end of the reporting year	<u>Not App.</u>
Of that quantity processed, report that quantity:	
In storage at the beginning of the reporting year	<u>NA</u>
Processed as a reactant (chemical producer)	<u>0.0</u>
Processed as a formulation component (mixture producer)	<u>0.0</u>
Processed as an article component (article producer)	<u>NA</u>
Repackaged (including export)	<u>0.0</u>
In storage at the end of the reporting year	<u>NA</u>

☐ Mark (X) this box if you attach a continuation sheet.

PART C IDENTIFICATION OF MIXTURES

- 1.17 Mixture -- If the listed substance on which you are required to report is a mixture or a component of a mixture, provide the following information for each component chemical. (If the mixture composition is variable, report an average percentage of each component chemical for all formulations.)

CBI

☐

Component Name	Supplier Name	Average % Composition by Weight (specify precision, e.g., 45% ± 0.5%)
<u>Toluene 2,4 Diisocyanate</u>	<u>Stepan Company</u>	<u>51% ± NA</u>
<u>Toluene 2,6 Diisocyanate</u>		<u>13% ± NA</u>
Total		100%

☐ Mark (X) this box if you attach a continuation sheet.

- 2.04 State the quantity of the listed substance that your facility manufactured, imported or processed during the 3 corporate fiscal years preceding the reporting year in descending order.

CBI

☐ Year ending [1][2] [8][7]
Mo. Year

Quantity manufactured Not App. kg

Quantity imported Not App. kg

Quantity processed 0 kg

Year ending [0][7] [3][6]
Mo. Year

Quantity manufactured Not App. kg

Quantity imported Not App. kg

Quantity processed 0 kg

Year ending [0][7] [3][5]
Mo. Year

Quantity manufactured Not App. kg

Quantity imported Not App. kg

Quantity processed 0 kg

- 2.05 Specify the manner in which you manufactured the listed substance. Circle all appropriate process types.

CBI

☐ Continuous process Not Applicable 1

Semicontinuous process 2

Batch process 3

☐ Mark (X) this box if you attach a continuation sheet.

2.06 Specify the manner in which you processed the listed substance. Circle all appropriate process types.

☐

Continuous process 1

Semicontinuous process 2

Batch process (3)

2.07 State your facility's name-plate capacity for manufacturing or processing the listed substance. (If you are a batch manufacturer or batch processor, do not answer this question.)

CBI

☐

Manufacturing capacity kg/yr

Processing capacity kg/yr

2.08 If you intend to increase or decrease the quantity of the listed substance manufactured, imported, or processed at any time after your current corporate fiscal year, estimate the increase or decrease based upon the reporting year's production volume.

CBI

☐

	Manufacturing Quantity (kg)	Importing Quantity (kg)	Processing Quantity (kg)
Amount of increase	<u>Not Applicable</u>	<u>Not Applicable</u>	<u>UK</u>
Amount of decrease	<u>Not Applicable</u>	<u>Not Applicable</u>	<u>UK</u>

☐ Mark (X) this box if you attach a continuation sheet.

2.09 For the three largest volume manufacturing or processing process types involving the listed substance, specify the number of days you manufactured or processed the listed substance during the reporting year. Also specify the average number of hours per day each process type was operated. (If only one or two operations are involved, list those.)

CBI

☐

Days/Year Average
 Hours/Day

Process Type #1 (The process type involving the largest quantity of the listed substance.)

Manufactured Not Applicable
Processed 12 1.5

Process Type #2 (The process type involving the 2nd largest quantity of the listed substance.)

Manufactured Not Applicable
Processed _____

Process Type #3 (The process type involving the 3rd largest quantity of the listed substance.)

Manufactured Not Applicable
Processed _____

2.10 State the maximum daily inventory and average monthly inventory of the listed substance that was stored on-site during the reporting year in the form of a bulk chemical.

CBI

☐

Maximum daily inventory Response Not Required for TDI kg
Average monthly inventory _____ kg

☐ Mark (X) this box if you attach a continuation sheet.

2.11 Related Product Types -- List any byproducts, coproducts, or impurities present with the listed substance in concentrations greater than 0.1 percent as it is manufactured, imported, or processed. The source of byproducts, coproducts, or impurities means the source from which the byproducts, coproducts, or impurities are made or introduced into the product (e.g., carryover from raw material, reaction product, etc.).

CBI

☐

<u>CAS No.</u>	<u>Chemical Name</u>	<u>Byproduct, Coproduct or Impurity¹</u>	<u>Concentration (%) (specify ± % precision)</u>	<u>Source of Byproducts, Coproducts, or Impurities</u>
<u>UK</u>	<u>UK</u>	<u>UK</u>	<u>UK</u>	<u>UK</u>

¹Use the following codes to designate byproduct, coproduct, or impurity:

B = Byproduct
C = Coproduct
I = Impurity

☐ Mark (X) this box if you attach a continuation sheet.

- 2.12 Existing Product Types -- List all existing product types which you manufactured, imported, or processed using the listed substance during the reporting year. List the quantity of listed substance you use for each product type as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI

☐

a.	b.	c.	d.
Product Types ¹	% of Quantity Manufactured, Imported, or Processed	% of Quantity Used Captively On-Site	Type of End-Users ²
<u>L</u>	<u>100% Processed</u>	<u>0</u>	<u>I</u>

¹Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/ Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

²Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

- 2.13 Expected Product Types -- Identify all product types which you expect to manufacture import, or process using the listed substance at any time after your current corporate fiscal year. For each use, specify the quantity you expect to manufacture import, or process for each use as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI

☐

a.	b.	c.	d.
Product Types ¹	% of Quantity Manufactured, Imported, or Processed	% of Quantity Used Captively On-Site	Type of End-Users ²
<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>

¹Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additive
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/ Sensitizer	N = Dye/Pigment/Colorant/Ink and additive
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

²Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

2.14 Final Product -- Complete the following table for each type of final product manufactured, imported, or processed at your facility that contains the listed substance other than as an impurity.

☐

a.	b.	c.	d.
Product Type ¹	Final Product's Physical Form ²	Average % Composition of Listed Substance in Final Product	Type of End-Users ³
<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>

¹Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

²Use the following codes to designate the final product's physical form:

A = Gas	F2 = Crystalline solid
B = Liquid	F3 = Granules
C = Aqueous solution	F4 = Other solid
D = Paste	G = Gel
E = Slurry	H = Other (specify) _____
F1 = Powder	

³Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

2.15 Circle all applicable modes of transportation used to deliver bulk shipments of the
CBI listed substance to off-site customers.

☐ Truck 1
Railcar 2
Barge, Vessel 3
Pipeline 4
Plane 5
Other (specify) 6

Not Applicable

2.16 Customer Use -- Estimate the quantity of the listed substance used by your customers
CBI or prepared by your customers during the reporting year for use under each category
of end use listed (i-iv).

☐ Category of End Use

i. Industrial Products

Chemical or mixture *Not App.* kg/yr
Article " " kg/yr

ii. Commercial Products

Chemical or mixture *Not App.* kg/yr
Article " " kg/yr

iii. Consumer Products

Chemical or mixture *Not App.* kg/yr
Article " " kg/yr

iv. Other

Distribution (excluding export) *Not App.* kg/yr
Export " " kg/yr
Quantity of substance consumed as reactant " " kg/yr
Unknown customer uses " " kg/yr

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 3 PROCESSOR RAW MATERIAL IDENTIFICATION

PART A GENERAL DATA

- 3.01 Specify the quantity purchased and the average price paid for the listed substance for each major source of supply listed. Product trades are treated as purchases.
CBI The average price is the market value of the product that was traded for the listed substance.

☐

<u>Source of Supply</u>	<u>Quantity (kg)</u>	<u>Average Price (\$/kg)</u>
The listed substance was manufactured on-site.	<u>NA</u>	<u>NA</u>
The listed substance was transferred from a different company site.	<u>NA</u>	<u>NA</u>
The listed substance was purchased directly from a manufacturer or importer.	<u>2.7 Kg</u>	<u>\$ 44.73</u>
The listed substance was purchased from a distributor or repackager.	<u>NA</u>	<u>NA</u>
The listed substance was purchased from a mixture producer.	<u>NA</u>	<u>NA</u>

- 3.02 Circle all applicable modes of transportation used to deliver the listed substance to your facility.

CBI

☐

- Truck ①
- Railcar 2
- Barge, Vessel 3
- Pipeline 4
- Plane 5
- Other (specify) _____ 6

☐ Mark (X) this box if you attach a continuation sheet.

3.03 a. Circle all applicable containers used to transport the listed substance to your facility.
CBI

☐

Bags 1
Boxes 2
Free standing tank cylinders 3
Tank rail cars 4
Hopper cars 5
Tank trucks 6
Hopper trucks 7
Drums 8
Pipeline 9
Other (specify) _____ 10

b. If the listed substance is transported in pressurized tank cylinders, tank rail cars, or tank trucks, state the pressure of the tanks.

Tank cylinders Not Applicable mmHg
Tank rail cars mmHg
Tank trucks mmHg

☐ Mark (X) this box if you attach a continuation sheet.

3.04 If you obtain the listed substance in the form of a mixture, list the trade name(s) of the mixture, the name of its supplier(s) or manufacturer(s), an estimate of the average percent composition by weight of the listed substance in the mixture, and the amount of mixture processed during the reporting year.

[illegible]

23

PART C RAW MATERIAL VOLUME

3.05 CBI State the quantity of the listed substance used as a raw material during the reporting year in the form of a class I chemical, class II chemical, or polymer, and the percent composition, by weight, of the listed substance.

☐

	Quantity Used (kg/yr)	% Composition by Weight of Listed Sub- stance in Raw Material (specify \pm % precision)
Class I chemical	<u>2.7 Kg.</u>	<u>64 % \pm NA</u>
	<u> </u>	<u> </u>
	<u> </u>	<u> </u>
Class II chemical	<u>Not App.</u>	<u>Not App.</u>
	<u> </u>	<u> </u>
	<u> </u>	<u> </u>
⁴ Polymer	<u>Not App.</u>	<u>Not App.</u>
	<u> </u>	<u> </u>
	<u> </u>	<u> </u>

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 4 PHYSICAL/CHEMICAL PROPERTIES

General Instructions:

If you are reporting on a mixture as defined in the glossary, reply to questions in Section 4 that are inappropriate to mixtures by stating "NA -- mixture."

For questions 4.06-4.15, if you possess any hazard warning statement, label, MSDS, or other notice that addresses the information requested, you may submit a copy or reasonable facsimile in lieu of answering those questions which it addresses.

PART A PHYSICAL/CHEMICAL DATA SUMMARY

- 4.01 Specify the percent purity for the three major¹ technical grade(s) of the listed substance as it is manufactured, imported, or processed. Measure the purity of the CBI substance in the final product form for manufacturing activities, at the time you import the substance, or at the point you begin to process the substance.

<input type="checkbox"/> "NA -- Mixture"	<u>Manufacture</u>	<u>Import</u>	<u>Process</u>
Technical grade #1	_____ % purity	_____ % purity	_____ % purity
Technical grade #2	_____ % purity	_____ % purity	_____ % purity
Technical grade #3	_____ % purity	_____ % purity	_____ % purity

¹Major = Greatest quantity of listed substance manufactured, imported or processed.

- 4.02 Submit your most recently updated Material Safety Data Sheet (MSDS) for the listed substance, and for every formulation containing the listed substance. If you possess an MSDS that you developed and an MSDS developed by a different source, submit your version. Indicate whether at least one MSDS has been submitted by circling the appropriate response.

☒ Yes

No

Indicate whether the MSDS was developed by your company or by a different source.

Your company

☒ Another source

☐ Mark (X) this box if you attach a continuation sheet.

SC005099

SANDERS ASSOCIATES
DANIEL WEBSTER HIGHWAY SOUTH
NASHUA NH 03060

Rec'd. 3/27/89

NF 04832 00

MATERIAL SAFETY DATA SHEET

DATE: 03/21/89

CUST # 75235-701

P.O.# NV0241

PAGE: 1

PRODUCT NUMBER: 188598

PRODUCT NAME: STEPANFOAM G-302-T

*
* STEPAN COMPANY EMERGENCY INFORMATION *
* NORTHFIELD, IL. 60093 MEDICAL: 1-800-228-5635 *
* (312) 446-7500 CHEMTREC: 1-800-424-9300 *

* SECTION I: GENERAL INFORMATION *

PRODUCT NUMBER: 188598 PRODUCT NAME: STEPANFOAM G-302-T
PRODUCT CLASS: TOLJENE DIISOCYANATE.
PRECAUTIONS: POISON.
REFER TO BILL OF LADING OR CONTAINER LABEL FOR DOT OR OTHER
TRANSPORTATION HAZARD CLASSIFICATION, IF ANY.

* SECTION II: HAZARDOUS INGREDIENTS *

INGREDIENT (CAS #)	OSHA PEL (PPM)	ACGIH TLV (PPM)	OTHER
--------------------	-------------------	--------------------	-------

(CONTINUED)

NF 04832 00

MATERIAL SAFETY DATA SHEET

DATE: 03/21/89

CUST # 75235-701

P.O.# NVO241

PAGE: 2

PRODUCT NUMBER: 188598

PRODUCT NAME: STEPANFJAM G-302-T

TOLUENE-2,4-DIISOCYANATE (TDI) (C) 0.005 0.005 SARA 313
(584-84-9)

51%
TOLUENE-2,6-DIISOCYANATE (TDI) (C) 0.005 0.005 SARA 313
(91-08-7)
13%

NE = NOT ESTABLISHED.

NL = NOT LISTED.

(C) = IDENTIFIED AS A CARCINOGEN BY OSHA, IARC, OR NTP.

SECTION III: PHYSICAL/CHEMICAL DATA

BOILING POINT:

OVER 200 DEG F. (93 DEG C.).

% VOLATILE BY WEIGHT:

NIL

EVAPORATION RATE: ESTIMATED SLOWER THAN ETHYL ETHER.

VAPOR DENSITY: ESTIMATED HEAVIER THAN AIR.

WEIGHT PER GALLON:

10.0 LBS.

SECTION IV: FIRE AND EXPLOSION DATA

FLASH POINT (SETA FLASH CLOSED CUP):

OVER 200 DEG F. (93 DEG C.).

EXPLOSIVE LIMITS:

LOWER:

1%

EXTINGUISHING MEDIA: DRY CHEMICAL, CARBON DIOXIDE, FOAM, OR
WATER FOG. CLASS BC, ABC FIRE EXTINGUISHER.

SPECIAL FIRE FIGHTING PROCEDURES: SELF-CONTAINED POSITIVE PRESSURE
BREATHING APPARATUS AND PROTECTIVE
CLOTHING SHOULD BE WORN IN FIGHT-
ING FIRES INVOLVING CHEMICALS.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE KNOWN.

SECTION V: REACTIVITY DATA

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

(CONTINUED)

04832 00

MATERIAL SAFETY DATA SHEET

DATE: 03/21/89

CUST # 75235-701

P.O.# NV0241

PAGE:

3

PRODUCT NUMBER: 188598

PRODUCT NAME: STEPANFOAM G-302-T

INCOMPATABILITY (MATERIALS TO AVOID):

STRONG OXIDIZING AGENTS

WATER, ALCOHOLS, AMINES, ALKALIES, METAL COMPOUNDS (CATALYSTS).

HAZARDOUS DECOMPOSITION PRODUCTS:

CYANIDES AND AMMONIA MAY BE FORMED.

* SECTION VI: HEALTH HAZARD DATA *

EFFECTS OF OVEREXPOSURE/EMERGENCY AND FIRST AID PROCEDURES

EYES: CONTACT WITH EYES IS PAINFUL AND IRRITATING.

FLUSH EYES IMMEDIATELY WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES.

SKIN: PROLONGED OR REPEATED CONTACT WITH SKIN CAUSES IRRITATION.

WASH OFF SKIN WITH WATER. REMOVE CONTAMINATED CLOTHING AND CLEAN BEFORE REUSE.

INHALATION: MIST CAUSED BY MANUFACTURING OPERATIONS IRRITATES NASAL PASSAGES.

IF VAPORS OR MIST CAUSE IRRITATION OR DISTRESS, REMOVE TO FRESH AIR.

GIVE OXYGEN OR APPLY ARTIFICIAL RESPIRATION, IF NEEDED.

INGESTION: IF SWALLOWED, CONSULT A PHYSICIAN IMMEDIATELY.

CHRONIC EFFECTS AND MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:

CHRONIC EFFECTS AND MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE TO THIS PRODUCT HAVE NOT BEEN ESTABLISHED.

UNNECESSARY EXPOSURE TO THIS PRODUCT OR ANY CHEMICAL SHOULD BE AVOIDED.

IF ANY SYMPTOMS PERSIST, CONSULT A PHYSICIAN.

IN A NATIONAL TOXICOLOGY PROGRAM (NTP) STUDY, TDI WAS CARCINOGENIC WHEN GIVEN ORALLY TO RATS AND MICE AT MAXIMUM TOLERATED DOSES. TDI WAS NOT CARCINOGENIC TO RATS IN A TWO-YEAR INHALATION STUDY.

SEE SECTION II FOR HAZARDOUS INGREDIENTS PRESENT IN THIS PRODUCT AND THEIR CORRESPONDING THRESHOLD LIMIT VALUES.

FOR ADDITIONAL MEDICAL INFORMATION, CALL 1-800-228-5635

* SECTION VII: SPILL, LEAK, AND DISPOSAL PROCEDURES *

CONTAIN ALL SPILLS AND LEAKS TO PREVENT DISCHARGE INTO THE
(CONTINUED)

DATE: 03/21/89

CUST # 75235-701

P.O.# NV0241

PAGE: 4

PRODUCT NUMBER: 188598

PRODUCT NAME: STEPANFOAM G-302-T

ENVIRONMENT.

VENTILATE AREA.

SMALL SPILLS: SOAK UP WITH ABSORBANT, SHOVEL INTO WASTE CONTAINER,
FLUSH AREA WITH WATER.

LARGE SPILLS: RECOVER LIQUID FOR REPROCESSING OR DISPOSAL.

WASTE DISPOSAL: RECOVER MATERIAL OR DISPOSE (INCINERATION IS
PREFERRED) IN ACCORDANCE WITH ALL APPLICABLE FEDERAL,
STATE, AND LOCAL REGULATIONS. MATERIAL COLLECTED WITH
ABSORBANT MAY BE DISPOSED IN A PERMITTED LANDFILL IN
ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.
EMPTY CONTAINER MAY RETAIN VAPOR OR PRODUCT RESIDUE.
OBSERVE ALL LABELED SAFEGUARDS UNTIL CONTAINER IS
CLEANED, RECONDITIONED, OR DESTROYED.

* SECTION VIII: PROTECTIVE MEASURES *

EYE PROTECTION: WEAR FULL FACE SHIELD OR GOGGLES WHEN HANDLING.

PROTECTIVE GLOVES: USE IMPERVIUS GLOVES.

RESPIRATORY PROTECTION:

IF VAPORS ARE PRESENT, USE NIOSH OR MSHA APPROVED RESPIRATOR FOR
ORGANIC VAPORS, AIR-LINE RESPIRATOR, OR A SELF-CONTAINED
BREATHING APPARATUS.

VENTILATION:

USE VENTILATION ADEQUATE TO KEEP HAZARDOUS INGREDIENTS BELOW
THEIR TLV (SEE SECTION II).

OTHER PROTECTIVE EQUIPMENT:

WEAR PROTECTIVE CLOTHING TO PREVENT REPEATED OR PROLONGED
CONTACT.

EYE WASH STATION AND SAFETY SHOWER SHOULD BE NEAR WORK AREA.

* SECTION IX: SPECIAL PRECAUTIONS *

HANDLING AND STORAGE:

AVOID OVERHEATING OR FREEZING.

AVOID OPEN FIRE OR FLAME.

OTHER PRECAUTIONS:

SPILLED MATERIAL IS SLIPPERY. WASH THOROUGHLY AFTER HANDLING. IF
INGESTED, CALL A PHYSICIAN.

DO NOT POUR INTO DRAINS, AS SOLIDS THAT FORM WILL PLUG SEWERS.

1% AMMONIA MAY BE USED TO NEUTRALIZE SPILLS.

(CONTINUED)

F 04832 00

MATERIAL SAFETY DATA SHEET

DATE: 03/21/89

CUST # 75235-701

P.O.# NV0241

PAGE: 5

PRODUCT NUMBER: 188593

PRODUCT NAME: STEPANFOAM G-302-T

NEITHER THIS DATA SHEET NOR ANY STATEMENT CONTAINED HEREIN GRANTS OR EXTENDS ANY LICENSE, EXPRESS OR IMPLIED, IN CONNECTION WITH PATENTS ISSUED OR PENDING WHICH MAY BE THE PROPERTY OF THE MANUFACTURER OR OTHERS. THE INFORMATION IN THIS DATA SHEET HAS BEEN ASSEMBLED BY THE MANUFACTURER BASED ON ITS OWN STUDIES AND ON THE WORK OF OTHERS. THE MANUFACTURER MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AS TO THE ACCURACY, COMPLETENESS, OR ADEQUACY OF THE INFORMATION CONTAINED HEREIN. THE MANUFACTURER SHALL NOT BE LIABLE (REGARDLESS OF FAULT) TO THE VENDEE, THE VENDEE'S EMPLOYEES, OR ANYONE FOR ANY DIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH THE ACCURACY, COMPLETENESS, ADEQUACY, OR FURNISHING OF SUCH INFORMATION.

(R) REGISTERED TRADEMARK OR APPLICATION PENDING.

LAST REVISION DATE: 03/09/89

09:49:29

4.03 Submit a copy or reasonable facsimile of any hazard information (other than an MSDS) that is provided to your customers/users regarding the listed substance or any formulation containing the listed substance. Indicate whether this information has been submitted by circling the appropriate response.

Yes 1

☒ No ☒ 2

4.04 For each activity that uses the listed substance, circle all the applicable number(s) corresponding to each physical state of the listed substance during the activity listed. Physical states for importing and processing activities are determined at the time you import or begin to process the listed substance. Physical states for manufacturing, storage, disposal and transport activities are determined using the final state of the product.

CBI

☐

Activity	Physical State				
	Solid	Slurry	Liquid	Liquified Gas	Gas
Manufacture	1	2	3	4	5
Import	1	2	3	4	5
Process	1	<input checked="" type="radio"/> 2	<input checked="" type="radio"/> 3	4	5
Store	1	2	3	4	5
Dispose	1	2	3	4	5
Transport	1	2	3	4	5

☐ Mark (X) this box if you attach a continuation sheet.

4.05 Particle Size -- If the listed substance exists in particulate form during any of the following activities, indicate for each applicable physical state the size and the percentage distribution of the listed substance by activity. Do not include particles ≥ 10 microns in diameter. Measure the physical state and particle sizes for importing and processing activities at the time you import or begin to process the listed substance. Measure the physical state and particle sizes for manufacturing storage, disposal and transport activities using the final state of the product.

CBI

☐

Not Applicable.

Physical State

Manufacture Import Process Store Dispose Transport

Dust <1 micron

1 to <5 microns

5 to <10 microns

Powder <1 micron

1 to <5 microns

5 to <10 microns

Fiber <1 micron

1 to <5 microns

5 to <10 microns

Aerosol <1 micron

1 to <5 microns

5 to <10 microns

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 5 ENVIRONMENTAL FATE

PART A RATE CONSTANTS AND TRANSFORMATION PRODUCTS

5.01 Indicate the rate constants for the following transformation processes.

a. Photolysis:

Absorption spectrum coefficient (peak) UK (1/M cm) at _____ nm

Reaction quantum yield, ϕ UK at _____ nm

Direct photolysis rate constant, k_p , at ... UK 1/hr _____ latitude

b. Oxidation constants at 25°C:

For 1O_2 (singlet oxygen), k_{ox} UK 1/M hr

For RO_2 (peroxy radical), k_{ox} UK 1/M hr

c. Five-day biochemical oxygen demand, BOD_5 ... UK mg/l

d. Biotransformation rate constant:

For bacterial transformation in water, k_b ... UK 1/hr

Specify culture UK

e. Hydrolysis rate constants:

For base-promoted process, k_B UK 1/M hr

For acid-promoted process, k_A UK 1/M hr

For neutral process, k_N UK 1/hr

f. Chemical reduction rate (specify conditions) UK

g. Other (such as spontaneous degradation) ... UK

☐ Mark (X) this box if you attach a continuation sheet.

PART B PARTITION COEFFICIENTS

5.02 a. Specify the half-life of the listed substance in the following media.

<u>Media</u>	<u>Half-life (specify units)</u>
Groundwater	<u>UK</u>
Atmosphere	<u>UK</u>
Surface water	<u>UK</u>
Soil	<u>UK</u>

b. Identify the listed substance's known transformation products that have a half-life greater than 24 hours.

<u>CAS No.</u>	<u>Name</u>	<u>Half-life (specify units)</u>	<u>Media</u>
<u>UK</u>	<u>UK</u>	<u>UK</u>	in <u>UK</u>
			in
			in
			in

5.03 Specify the octanol-water partition coefficient, K_{ow} ... UK at 25°C
 Method of calculation or determination

5.04 Specify the soil-water partition coefficient, K_d UK at 25°C
 Soil type

5.05 Specify the organic carbon-water partition coefficient, K_{oc} UK at 25°C

5.06 Specify the Henry's Law Constant, H UK atm-m³/mole

☐ Mark (X) this box if you attach a continuation sheet.

5.07 List the bioconcentration factor (BCF) of the listed substance, the species for which it was determined, and the type of test used in deriving the BCF.

<u>Bioconcentration Factor</u>	<u>Species</u>	<u>Test</u> ¹
<u>UK</u>	<u>UK</u>	<u>UK</u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>

¹Use the following codes to designate the type of test:

F = Flowthrough
S = Static

☐ Mark (X) this box if you attach a continuation sheet.

6.04 For each market listed below, state the quantity sold and the total sales value of
 CBI the listed substance sold or transferred in bulk during the reporting year.

☐

Not Applicable

<u>Market</u>	<u>Quantity Sold or Transferred (kg/yr)</u>	<u>Total Sales Value (\$/yr)</u>
Retail sales	_____	_____
Distribution -- Wholesalers	_____	_____
Distribution -- Retailers	_____	_____
Intra-company transfer	_____	_____
Repackagers	_____	_____
Mixture producers	_____	_____
Article producers	_____	_____
Other chemical manufacturers or processors	_____	_____
Exporters	_____	_____
Other (specify) _____	_____	_____

6.05 Substitutes -- List all known commercially feasible substitutes that you know exist
 for the listed substance and state the cost of each substitute. A commercially
 CBI feasible substitute is one which is economically and technologically feasible to use
 in your current operation, and which results in a final product with comparable
 performance in its end uses.

☐

<u>Substitute</u>	<u>Cost (\$/kg)</u>
<i>UK</i>	<i>UK</i>
_____	_____
_____	_____
_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 7 MANUFACTURING AND PROCESSING INFORMATION

General Instructions:

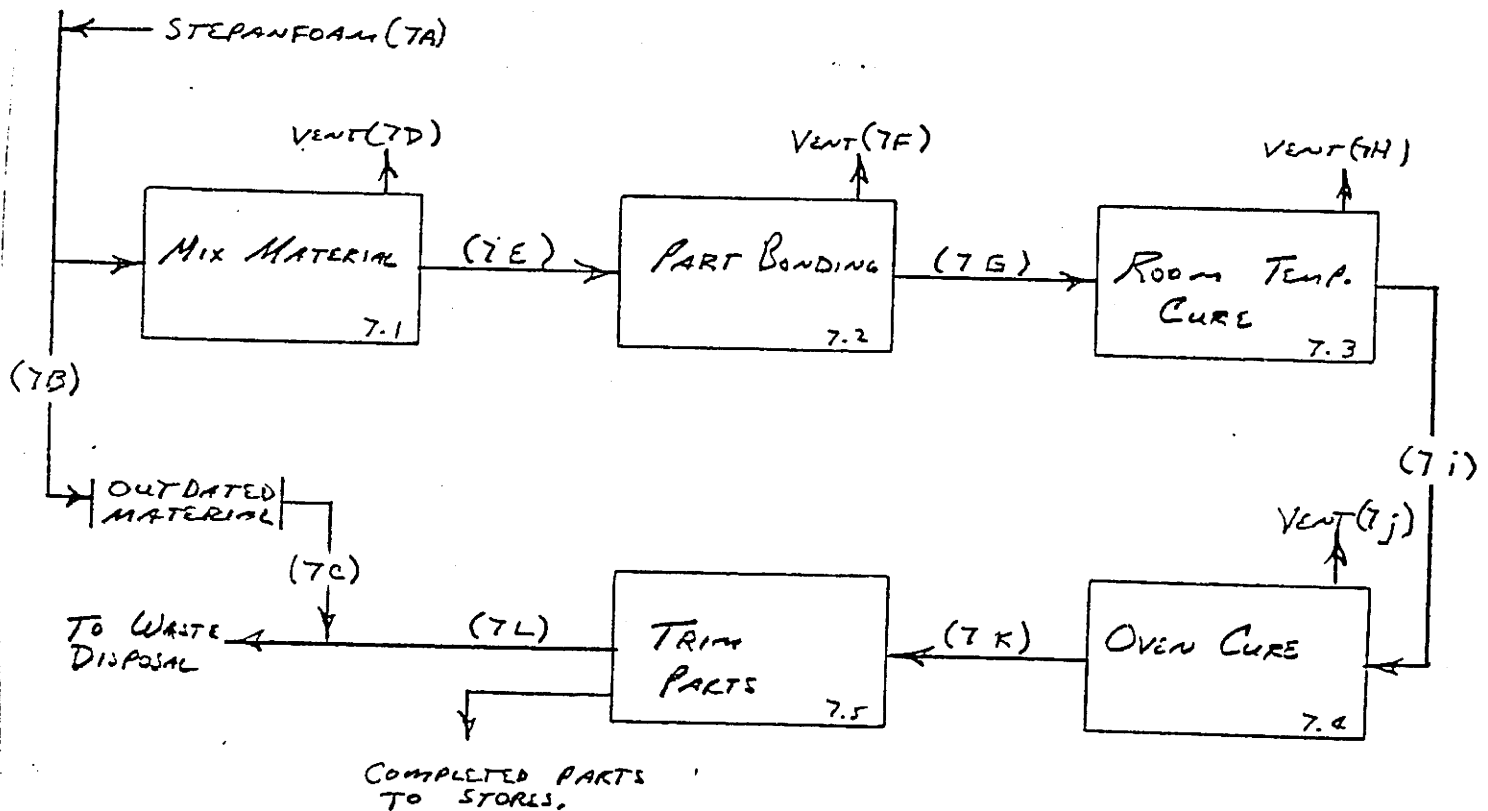
For questions 7.04-7.06, provide a separate response for each process block flow diagram provided in questions 7.01, 7.02, and 7.03. Identify the process type from which the information is extracted.

PART A MANUFACTURING AND PROCESSING PROCESS TYPE DESCRIPTION

7.01 In accordance with the instructions, provide a process block flow diagram showing major (greatest volume) process type involving the listed substance.

CBI

☐ Process type ASSEMBLY BONDING



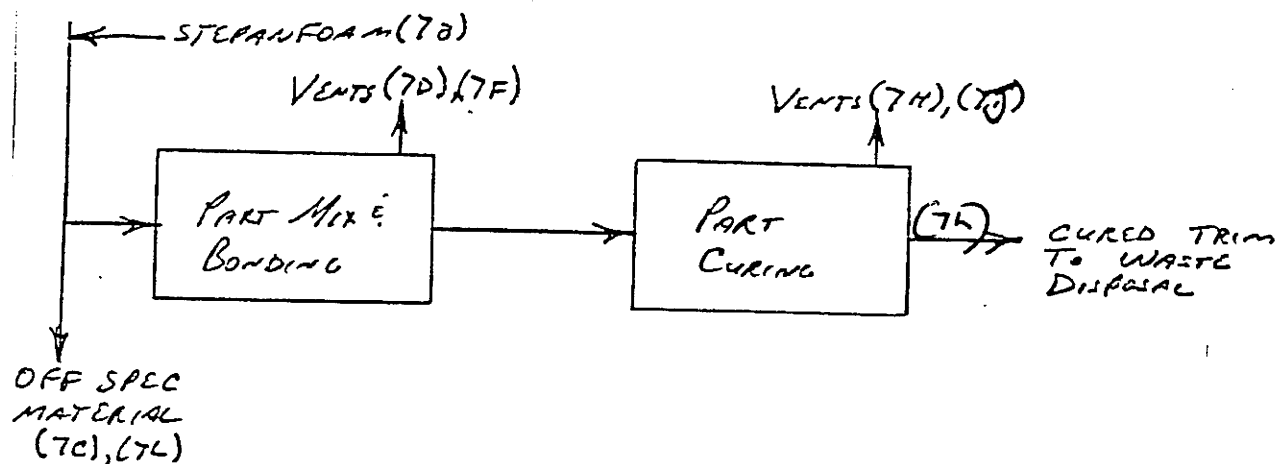
☐ Mark (X) this box if you attach a continuation sheet.

STEPANFOAM - H4D3

7.03 In accordance with the instructions, provide a process block flow diagram showing process emission streams and emission points that contain the listed substance and which, if combined, would total at least 90 percent of all facility emissions if not treated before emission into the environment... If all such emissions are released from one process type, provide a process block flow diagram using the instructions for question 7.01. If all such emissions are released from more than one process type, provide a process block flow diagram showing each process type as a separate block.

CBI

☐ Process type ASSEMBLY BONDING



TOI Emissions

- 7D Material Mixing Station Vent
- 7F Parts Bonding Vent
- 7H Curing Room Vents
- 7J Curing Oven Vent

☐ Mark (X) this box if you attach a continuation sheet.

7.04 Describe the typical equipment types for each unit operation identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type Assembly Bonding

Unit Operation ID Number	Typical Equipment Type	Operating Temperature Range (°C)	Operating Pressure Range (mm Hg)	Vessel Composition
<u>7.1</u>	<u>Weighing Balance</u>	<u>Ambient</u>	<u>Atmospheric</u>	<u>NA</u>
<u>7.1</u>	<u>Mixing Sticks</u>	<u>"</u>	<u>"</u>	<u>Wood</u>
<u>7.1</u>	<u>Polyethylene Cups</u>	<u>"</u>	<u>"</u>	<u>Polyethylene</u>
<u>7.1</u>	<u>Mechanical Timer</u>	<u>"</u>	<u>"</u>	<u>NA</u>
<u>7.2</u>	<u>Mixing Sticks</u>	<u>"</u>	<u>"</u>	<u>Wood</u>
<u>7.2</u>	<u>Polyethylene Cup</u>	<u>"</u>	<u>"</u>	<u>Polyethylene</u>
<u>7.3</u>	<u>Ventilated Bench</u>	<u>"</u>	<u>"</u>	<u>NA</u>
<u>7.4</u>	<u>Oven</u>	<u>65°C</u>	<u>"</u>	<u>Steel</u>
<u>7.5</u>	<u>X-acto Knife</u>	<u>Ambient</u>	<u>"</u>	<u>Metal</u>
_____	_____	_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

BI

☐ Process type ASSEMBLY BONDING

Process Stream ID Code	Process Stream Description	Physical State ¹	Stream Flow (kg/yr)
<u>7D, 7E, 7H, 7J</u>	<u>VENTILATED BENCH</u>	<u>GU</u>	<u>UNK</u>
<u>7C, 7L</u>	<u>OFF-SPEC STEPANFOAM</u>	<u>OL/SY/SO</u>	<u>UNK</u>
<u>7E, 7G, 7I, 7K</u>	<u>Stepanfoam G302T</u>	<u>OL</u>	<u>UNK</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

¹Use the following codes to designate the physical state for each process stream:

- GC = Gas (condensable at ambient temperature and pressure)
- GU = Gas (uncondensable at ambient temperature and pressure)
- SO = Solid
- SY = Sludge or slurry
- AL = Aqueous liquid
- OL = Organic liquid
- IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

☐ Mark (X) this box if you attach a continuation sheet.

STEPANFOAM - HUD3

7.06 Characterize each process stream identified in your process block flow diagram(s).
If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the CBI instructions for further explanation and an example.)

☐ Process type Assembly Bonding

a.	b.	c.	d.	e.
Process Stream ID Code	Known Compounds ¹	Concentrations ^{2,3} (% or ppm)	Other Expected Compounds	Estimated Concentrations (% or ppm)
<u>7E, 7G, 7I</u> <u>7K, 7L</u>	<u>TDI</u> "	<u>NA</u> "	<u>NA</u> "	<u>UK</u> "
<u>7C, 7L</u>	<u>TDI</u>	<u>NA</u>	<u>NA</u>	<u>UK</u>
<u>7D, 7F</u> <u>7H, 7J</u>	<u>TDI</u> "	<u>NA</u> "	<u>NA</u> "	<u>UK</u> "

7.06 continued below

☐ Mark (X) this box if you attach a continuation sheet.

7.06 (continued)

Not Applicable

¹For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column b. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

<u>Additive Package Number</u>	<u>Components of Additive Package</u>	<u>Concentrations (% or ppm)</u>
<u>1</u>		
<u>2</u>		
<u>3</u>		
<u>4</u>		
<u>5</u>		

²Use the following codes to designate how the concentration was determined:

A = Analytical result
E = Engineering judgement/calculation

³Use the following codes to designate how the concentration was measured:

V = Volume
W = Weight

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 8 RESIDUAL TREATMENT GENERATION, CHARACTERIZATION, TRANSPORTATION, AND MANAGEMENT

General Instructions:

For questions 8.04-8.06, provide a separate response for each residual treatment block flow diagram provided in question 8.01, 8.02 or 8.03. Identify the process type from which the information is extracted.

For questions 8.05-8.33, the Stream Identification Codes are those process streams listed in either the Section 7 or Section 8 block flow diagrams which contain residuals for each applicable waste management method.

For questions 8.07-8.33, if residuals are combined before they are handled, list those Stream Identification Codes on the same line.

Questions 8.09-8.33 refer to the waste management activities involving the residuals identified in either the Section 7 or Section 8 block flow diagrams. Not all Stream Identification Codes used in the sample answers (e.g., for the incinerator questions) have corresponding process streams identified in the block flow diagram(s). These Stream Identification codes are for illustrative purposes only.

For questions 8.11-8.33, if you have provided the information requested on one of the EPA Office of Solid Waste surveys listed below within the three years prior to your reporting year, you may submit a copy or reasonable facsimile in lieu of answering those questions which the survey addresses. The applicable surveys are: (1) Hazardous Waste Treatment, Storage, Disposal, and Recycling Survey; (2) Hazardous Waste Generator Survey; or (3) Subtitle D Industrial Facility Mail Survey.

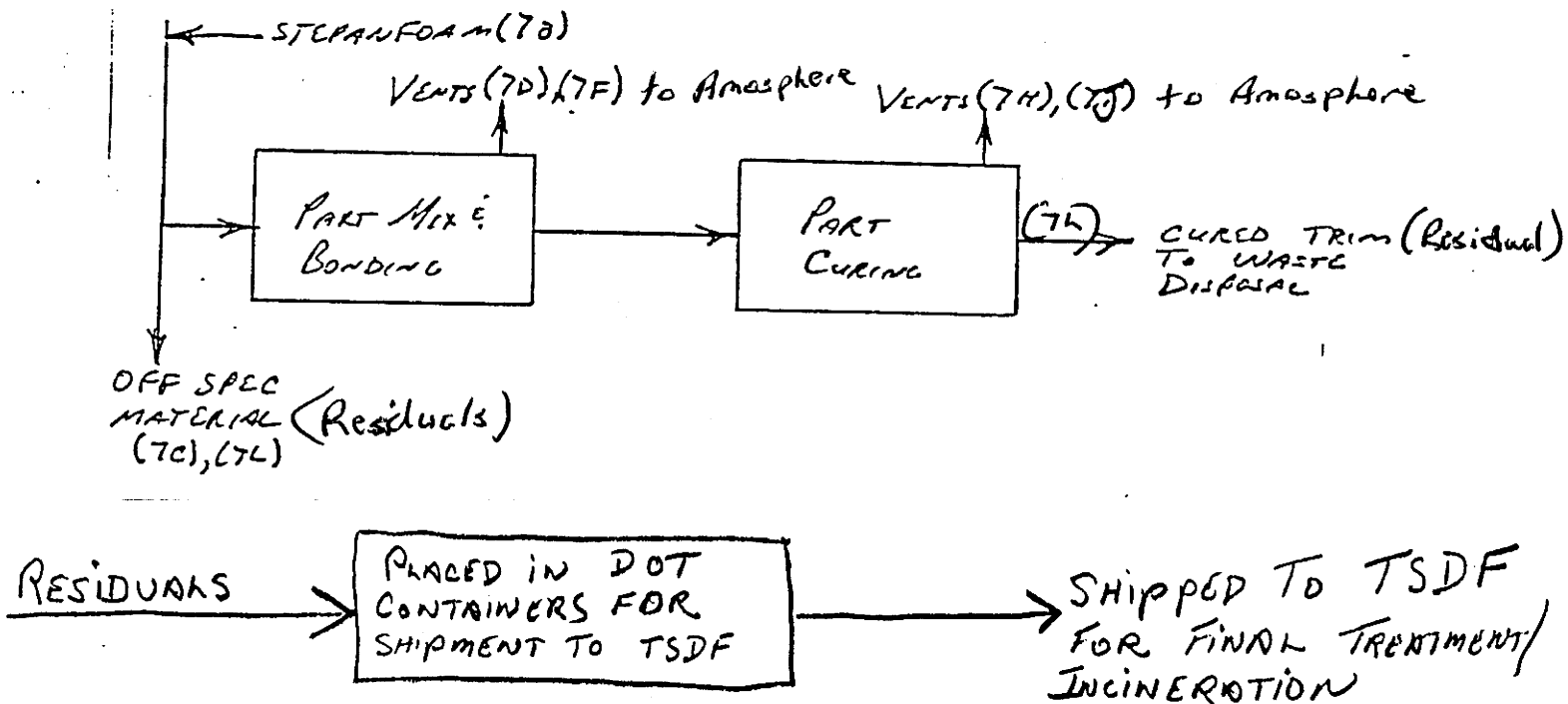
☐ Mark (X) this box if you attach a continuation sheet.

PART A RESIDUAL TREATMENT PROCESS DESCRIPTION

8.01 In accordance with the instructions, provide a residual treatment block flow diagram which describes the treatment process used for residuals identified in question 7.01.

CBI

☐ Process type Assembly Bonding



ALL RESIDUALS ARE STORED UNTILL SHIPPED OFF SITE TO A BROKER WHO INTURN WILL SHIP THE MATERIAL FOR FINAL TREATMENT OR INCINERATION. NO ON SITE TREATMENT OR INCINERATION OCCURES.

☐ Mark (X) this box if you attach a continuation sheet.

8.05 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

[] Process type Assembly Bonding

a. b. c. d. e. f. g.

[illegible]

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

¹ Use the following codes to designate the type of hazardous waste:

I = Ignitable
C = Corrosive
R = Reactive
E = EP toxic
T = Toxic
H = Acutely hazardous

² Use the following codes to designate the physical state of the residual:

GC = Gas (condensable at ambient temperature and pressure)
GU = Gas (uncondensable at ambient temperature and pressure)
SO = Solid
SY = Sludge or slurry
AL = Aqueous liquid
OL = Organic liquid
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

Not Applicable

³For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column d. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

<u>Additive Package Number</u>	<u>Components of Additive Package</u>	<u>Concentrations (% or ppm)</u>
<u>1</u>		
<u>2</u>		
<u>3</u>		
<u>4</u>		
<u>5</u>		

⁴Use the following codes to designate how the concentration was determined:

A = Analytical result

E = Engineering judgement/calculation

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

Not Applicable

⁵Use the following codes to designate how the concentration was measured:

V = Volume

W = Weight

⁶Specify the analytical test methods used and their detection limits in the table below. Assign a code to each test method used and list those codes in column e.

<u>Code</u>	<u>Method</u>	Detection Limit (\pm ug/l)
<u>1</u>	_____	_____
<u>2</u>	_____	_____
<u>3</u>	_____	_____
<u>4</u>	_____	_____
<u>5</u>	_____	_____
<u>6</u>	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

8.06 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

CBI

☐ Process type Assembly Bonding

a.	b.	c.	d.	e.	f.	g.
Stream ID Code	Waste Description Code ¹	Management Method Code ²	Residual Quantities (kg/yr)	Management of Residual (%) On-Site Off-Site	Costs for Off-Site Management (per kg)	Changes in Management Methods
<u>7C</u>	<u>B70</u>	<u>11I</u>	<u>UK</u>	<u>0</u> <u>100</u>	<u>UK</u>	<u>UK</u>
<u>7L</u>	<u>B76</u>	<u>11I</u>	<u>UK</u>	<u>0</u> <u>100</u>	<u>UK</u>	<u>UK</u>
<u>7D, 7E, 7H, 7J</u>	<u>B91</u>	<u>M5</u>	<u>UK</u>	<u>UK</u> <u>NA</u>	<u>NA</u>	<u>NA</u>

¹Use the codes provided in Exhibit 8-1 to designate the waste descriptions

²Use the codes provided in Exhibit 8-2 to designate the management methods

☐ Mark (X) this box if you attach a continuation sheet.

EXHIBIT 8-1.
(Refers to question 8.06(b))

WASTE DESCRIPTION CODES

These waste description codes were developed specifically for this survey to supplement the descriptions listed with the RCRA and other waste codes. (These waste description codes are not regulatory definitions.)

WASTE DESCRIPTION CODES FOR HAZARDOUS WASTE DESCRIBED BY A SINGLE RCRA F, K, P, OR U WASTE CODE

A01 Spent solvent (F001-F005, K086)	A06 Contaminated soil or cleanup residue	A10 Incinerator ash
A02 Other organic liquid (F001-F005, K086)	A07 Other F or K waste, exactly as described*	A11 Solidified treatment residue
A03 Still bottom (F001-F005, K086)	A08 Concentrated off-spec or discarded product	A12 Other treatment residue (specify in "Facility Notes")
A04 Other organic sludge (F001-F005, K086)	A09 Empty containers	A13 Other untreated waste (specify in "Facility Notes")
A05 Wastewater or aqueous mixture		

*"Exactly as described" means that the waste matches the description of the RCRA waste code.

INORGANIC LIQUIDS—Waste that is primarily inorganic and highly fluid (e.g., aqueous), with low suspended inorganic solids and low organic content.

- B01 Aqueous waste with low solvents
- B02 Aqueous waste with low other toxic organics
- B03 Spent acid with metals
- B04 Spent acid without metals
- B05 Acidic aqueous waste
- B06 Caustic solution with metals but no cyanides
- B07 Caustic solution with metals and cyanides
- B08 Caustic solution with cyanides but no metals
- B09 Spent caustic
- B10 Caustic aqueous waste
- B11 Aqueous waste with reactive sulfides
- B12 Aqueous waste with other reactives (e.g., explosives)
- B13 Other aqueous waste with high dissolved solids
- B14 Other aqueous waste with low dissolved solids
- B15 Scrubber water
- B16 Leachate
- B17 Waste liquid mercury
- B18 Other inorganic liquid (specify in "Facility Notes")

INORGANIC SLUDGES—Waste that is primarily inorganic, with moderate-to-high water content and low organic content; pumpable.

- B19 Lime sludge without metals
- B20 Lime sludge with metals/metal hydroxide sludge
- B21 Wastewater treatment sludge with toxic organics
- B22 Other wastewater treatment sludge
- B23 Untreated plating sludge without cyanides
- B24 Untreated plating sludge with cyanides
- B25 Other sludge with cyanides
- B26 Sludge with reactive sulfides
- B27 Sludge with other reactives
- B28 Degreasing sludge with metal scale or filings
- B29 Air pollution control device sludge (e.g., fly ash, wet scrubber sludge)
- B30 Sediment or lagoon dragout contaminated with organics
- B31 Sediment or lagoon dragout contaminated with inorganics only

- B32 Drilling mud
- B33 Asbestos slurry or sludge
- B34 Chloride or other brine sludge
- B35 Other inorganic sludge (specify in "Facility Notes")

INORGANIC SOLIDS—Waste that is primarily inorganic and solid, with low organic content and low-to-moderate water content; not pumpable.

- B36 Soil contaminated with organics
- B37 Soil contaminated with inorganics only
- B38 Ash, slag, or other residue from incineration of wastes
- B39 Other "dry" ash, slag, or thermal residue
- B40 "Dry" lime or metal hydroxide solids chemically "fixed"
- B41 "Dry" lime or metal hydroxide solids not "fixed"
- B42 Metal scale, filings, or scrap
- B43 Empty or crushed metal drums or containers
- B44 Batteries or battery parts, casings, cores
- B45 Spent solid filters or adsorbents
- B46 Asbestos solids and debris
- B47 Metal-cyanide salts/chemicals
- B48 Reactive cyanide salts/chemicals
- B49 Reactive sulfide salts/chemicals
- B50 Other reactive salts/chemicals
- B51 Other metal salts/chemicals
- B52 Other waste inorganic chemicals
- B53 Lab packs of old chemicals only
- B54 Lab packs of debris only
- B55 Mixed lab packs
- B56 Other inorganic solids (specify in "Facility Notes")

INORGANIC GASES—Waste that is primarily inorganic with a low organic content and is a gas at atmospheric pressure.

- B57 Inorganic gases

ORGANIC LIQUIDS—Waste that is primarily organic and is highly fluid, with low inorganic solids content and low-to-moderate water content.

- B58 Concentrated solvent-water solution
- B59 Halogenated (e.g., chlorinated) solvent
- B60 Nonhalogenated solvent

- B61 Halogenated/nonhalogenated solvent mixture
- B62 Oil-water emulsion or mixture
- B63 Waste oil
- B64 Concentrated aqueous solution of other organics
- B65 Concentrated phenolics
- B66 Organic paint, ink, lacquer, or varnish
- B67 Adhesives or epoxies
- B68 Paint thinner or petroleum distillates
- B69 Reactive or polymerizable organic liquid
- B70 Other organic liquid (specify in "Facility Notes")

ORGANIC SLUDGES—Waste that is primarily organic, with low-to-moderate inorganic solids content and water content; pumpable.

- B71 Still bottoms of halogenated (e.g., chlorinated) solvents or other organic liquids
- B72 Still bottoms of nonhalogenated solvents or other organic liquids
- B73 Oily sludge
- B74 Organic paint or ink sludge
- B75 Reactive or polymerizable organics
- B76 Resins, tars, or tarry sludge
- B77 Biological treatment sludge
- B78 Sewage or other untreated biological sludge
- B79 Other organic sludge (specify in "Facility Notes")

ORGANIC SOLIDS—Waste that is primarily organic and solid, with low-to-moderate inorganic content and water content; not pumpable.

- B80 Halogenated pesticide solid
- B81 Nonhalogenated pesticide solid
- B82 Solid resins or polymerized organics
- B83 Spent carbon
- B84 Reactive organic solid
- B85 Empty fiber or plastic containers
- B86 Lab packs of old chemicals only
- B87 Lab packs of debris only
- B88 Mixed lab packs
- B89 Other halogenated organic solid
- B90 Other nonhalogenated organic solid

ORGANIC GASES—Waste that is primarily organic with low-to-moderate inorganic content and is a gas at atmospheric pressure.

- B91 Organic gases

EXHIBIT 8-2.
(Refers to question 8.06(c))

MANAGEMENT METHODS

- M1 = Discharge to publicly owned wastewater treatment works
M2 = Discharge to surface water under NPDES
M3 = Discharge to off-site, privately owned wastewater treatment works
M4 = Scrubber: a) caustic; b) water; c) other
M5 = Vent to: a) atmosphere; b) flare; c) other (specify) _____
M6 = Other (specify) _____

TREATMENT AND RECYCLING

Incineration/thermal treatment

- 1I Liquid injection
2I Rotary or rocking kiln
3I Rotary kiln with a liquid injection unit
4I Two stage
5I Fixed hearth
6I Multiple hearth
7I Fluidized bed
8I Infrared
9I Fume/vapor
10I Pyrolytic destructor
11I Other incineration/thermal treatment

Reuse as fuel

- 1RF Cement kiln
2RF Aggregate kiln
3RF Asphalt kiln
4RF Other kiln
5RF Blast furnace
6RF Sulfur recovery furnace
7RF Smelting, melting, or refining furnace
8RF Coke oven
9RF Other industrial furnace
10RF Industrial boiler
11RF Utility boiler
12RF Process heater
13RF Other reuse as fuel unit

Fuel Blending

- 1FB Fuel blending

Solidification

- 1S Cement or cement/silicate processes
2S Pozzolanic processes
3S Asphaltic processes
4S Thermoplastic techniques
5S Organic polymer techniques
6S Jacketing (macro-encapsulation)
7S Other solidification

Recovery of solvents and liquid organics for reuse

- 1SR Fractionation
2SR Batch still distillation
3SR Solvent extraction
4SR Thin-film evaporation
5SR Filtration
6SR Phase separation
7SR Dessication
8SR Other solvent recovery

Recovery of metals

- 1MR Activated carbon (for metals recovery)
2MR Electrodialysis (for metals recovery)
3MR Electrolytic metal recovery
4MR Ion exchange (for metals recovery)
5MR Reverse osmosis (for metals recovery)
6MR Solvent extraction (for metals recovery)
7MR Ultrafiltration (for metals recovery)
8MR Other metals recovery

Wastewater Treatment

After each wastewater treatment type listed below (1WT - 66WT) specify a) tank; or b) surface impoundment (i.e., 63WTa)

Equalization

- 1WT Equalization

Cyanide oxidation

- 2WT Alkaline chlorination
3WT Ozone
4WT Electrochemical
5WT Other cyanide oxidation

General oxidation (including disinfection)

- 6WT Chlorination
7WT Ozonation
8WT UV radiation
9WT Other general oxidation

Chemical precipitation¹

- 10WT Lime
11WT Sodium hydroxide
12WT Soda ash
13WT Sulfide
14WT Other chemical precipitation

Chromium reduction

- 15WT Sodium bisulfite
16WT Sulfur dioxide

EXHIBIT 8-2. (continued)

MANAGEMENT METHODS

17WT Ferrous sulfate
18WT Other chromium reduction

Complexed metals treatment (other than
chemical precipitation by pH adjustment)
19WT Complexed metals treatment¹

Emulsion breaking
20WT Thermal
21WT Chemical
22WT Other emulsion breaking

Adsorption
23WT Carbon adsorption
24WT Ion exchange
25WT Resin adsorption
26WT Other adsorption

Stripping
27WT Air stripping
28WT Steam stripping
29WT Other stripping

Evaporation
30WT Thermal
31WT Solar
32WT Vapor recompression
33WT Other evaporation

Filtration
34WT Diatomaceous earth
35WT Sand
36WT Multimedia
37WT Other filtration

Sludge dewatering
38WT Gravity thickening
39WT Vacuum filtration
40WT Pressure filtration (belt, plate
and frame, or leaf)
41WT Centrifuge
42WT Other sludge dewatering

Air flotation
43WT Dissolved air flotation
44WT Partial aeration
45WT Air dispersion
46WT Other air flotation

Oil skimming
47WT Gravity separation

48WT Coalescing plate separation
49WT Other oil skimming

Other liquid phase separation
50WT Decanting
51WT Other liquid phase separation

Biological treatment
52WT Activated sludge
53WT Fixed film-trickling filter
54WT Fixed film-rotating contactor
55WT Lagoon or basin, aerated
56WT Lagoon, facultative
57WT Anaerobic
58WT Other biological treatment

Other wastewater treatment
59WT Wet air oxidation
60WT Neutralization
61WT Nitrification
62WT Denitrification
63WT Flocculation and/or coagulation
64WT Settling (clarification)
65WT Reverse osmosis
66WT Other wastewater treatment

OTHER WASTE TREATMENT

1TR Other treatment
2TR Other recovery for reuse

ACCUMULATION

1A Containers
2A Tanks

STORAGE

1ST Container (i.e., barrel, drum)
2ST Tank
3ST Waste pile
4ST Surface impoundment
5ST Other storage

DISPOSAL

1D Landfill
2D Land treatment
3D Surface impoundment (to be closed
as a landfill)
4D Underground injection well

¹Chemical precipitation is a treatment operation whereby the pH of a waste is adjusted to the range necessary for removal (precipitation) of contaminants. However, if the pH is adjusted solely to achieve a neutral pH, THE OPERATION SHOULD BE CONSIDERED NEUTRALIZATION (60WT).

8.22 Describe the combustion chamber design parameters for each of the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

CBI

☐ Response not required for TDI

Incinerator	Combustion Chamber Temperature (°C)		Location of Temperature Monitor		Residence Time In Combustion Chamber (seconds)	
	Primary	Secondary	Primary	Secondary	Primary	Secondary
1						
2						
3						

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes 1

No 2

8.23 Complete the following table for the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

CBI

☐

Not Applicable

Incinerator	Air Pollution Control Device ¹	Types of Emissions Data Available
1		
2		
3		

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes 1

No 2

¹Use the following codes to designate the air pollution control device:

- S = Scrubber (include type of scrubber in parenthesis)
- E = Electrostatic precipitator
- O = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 9 WORKER EXPOSURE

General Instructions:

Questions 9.03-9.25 apply only to those processes and workers involved in manufacturing or processing the listed substance. Do not include workers involved in residual waste treatment unless they are involved in this treatment process on a regular basis (i.e., exclude maintenance workers, construction workers, etc.).

☐ Mark (X) this box if you attach a continuation sheet.

PART A EMPLOYMENT AND POTENTIAL EXPOSURE PROFILE

9.01 Mark (X) the appropriate column to indicate whether your company maintains records on the following data elements for hourly and salaried workers. Specify for each data element the year in which you began maintaining records and the number of years the records for that data element are maintained. (Refer to the instructions for further explanation and an example.)

☐

Data Element	Data are Maintained for:		Year in Which Data Collection Began	Number of Years Records Are Maintained
	Hourly Workers	Salaried Workers		
Date of hire	<u>X</u>	<u>X</u>	<u>1952</u>	<u>Indef</u>
Age at hire	<u>X</u>	<u>X</u>	<u>1952</u>	<u>Indef</u>
Work history of individual before employment at your facility	<u>X</u>	<u>X</u>	<u>1952</u>	<u>Indef</u>
Sex	<u>X</u>	<u>X</u>	<u>1952</u>	<u>Indef</u>
Race	<u>X</u>	<u>X</u>	<u>1961</u>	<u>Indef</u>
Job titles	<u>X</u>	<u>X</u>	<u>1952</u>	<u>Indef</u>
Start date for each job title	<u>X</u>	<u>X</u>	<u>1952</u>	<u>Indef</u>
End date for each job title	<u>X</u>	<u>X</u>	<u>1952</u>	<u>Indef</u>
Work area industrial hygiene monitoring data	<u>X</u>	<u>X</u>	<u>1980</u>	<u>Indef</u>
Personal employee monitoring data	<u>X</u>	<u>X</u>	<u>1980</u>	<u>Indef</u>
Employee medical history	<u>X</u>	<u>X</u>	<u>1952</u>	<u>Indef</u>
Employee smoking history	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Accident history	<u>X</u>	<u>X</u>	<u>1952</u>	<u>Indef</u>
Retirement date	<u>X</u>	<u>X</u>	<u>1952</u>	<u>Indef</u>
Termination date	<u>X</u>	<u>X</u>	<u>1952</u>	<u>Indef</u>
Vital status of retirees	<u>X</u>	<u>X</u>	<u>1952</u>	<u>Indef</u>
Cause of death data	<u>X</u>	<u>X</u>	<u>1952</u>	<u>Indef</u>

☐ Mark (X) this box if you attach a continuation sheet.

9.02 In accordance with the instructions, complete the following table for each activity in which you engage.

CBI

☐

a.	b.	c.	d.	e.
Activity	Process Category	Yearly Quantity (kg)	Total Workers	Total Worker-Hours
Manufacture of the listed substance	Enclosed	<u>Not App.</u>	<u>Not App.</u>	<u>Not App.</u>
	Controlled Release	<u>"</u>	<u>"</u>	<u>"</u>
	Open	<u>"</u>	<u>"</u>	<u>"</u>
On-site use as reactant	Enclosed	<u>"</u>	<u>"</u>	<u>"</u>
	Controlled Release	<u>"</u>	<u>"</u>	<u>"</u>
	Open	<u>"</u>	<u>"</u>	<u>"</u>
On-site use as nonreactant	Enclosed	<u>"</u>	<u>"</u>	<u>"</u>
	Controlled Release	<u>"</u>	<u>"</u>	<u>"</u>
	Open	<u>"</u>	<u>"</u>	<u>"</u>
On-site preparation of products	Enclosed	<u>"</u>	<u>"</u>	<u>"</u>
	Controlled Release	<u>"</u>	<u>"</u>	<u>"</u>
	Open	<u>2.7 kg.</u>	<u>N/A</u>	<u>N/A</u>

☐ Mark (X) this box if you attach a continuation sheet.

9.03 Provide a descriptive job title for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance.

CBI

☐

Labor Category

Descriptive Job Title

A

Assembler Specialist

B

Wave Solder Operator

C

D

E

F

G

H

I

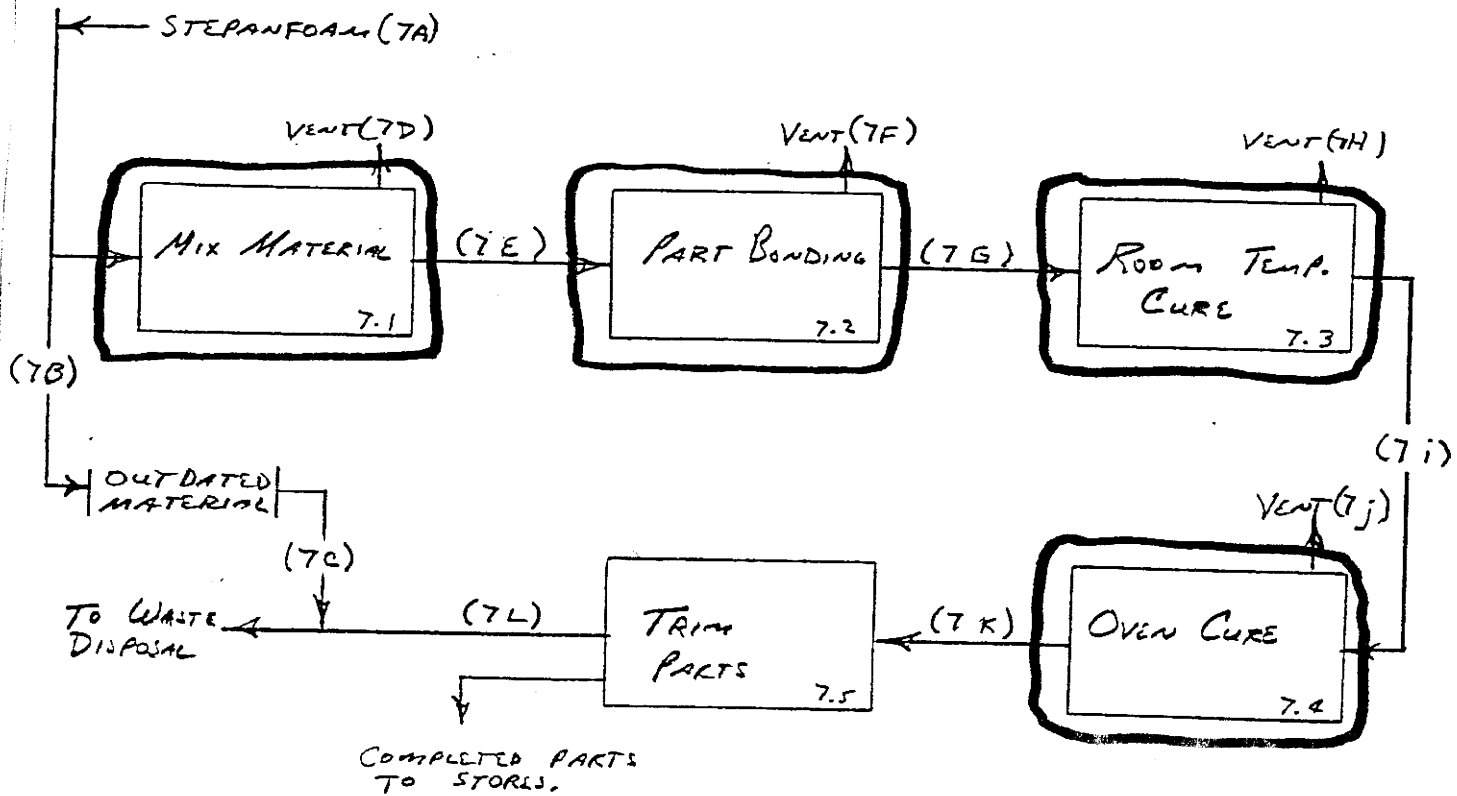
J

☐ Mark (X) this box if you attach a continuation sheet.

9.04 In accordance with the instructions, provide your process block flow diagram(s) and indicate associated work areas.

CBI

Process type ASSEMBLY BONDING



Mark (X) this box if you attach a continuation sheet.

STEPANFOAM - HUD}

9.05 Describe the various work area(s) shown in question 9.04 that encompass workers who may potentially come in contact with or be exposed to the listed substance. Add any additional areas not shown in the process block flow diagram in question 7.01 or 7.02. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type Assembly Bonding

Work Area ID

Description of Work Areas and Worker Activities

1 (7.1)	(7.1) Ventilated Bench - operator weighs
2 (7.2)	material and mixes batches.
3 (7.3)	(7.2) Ventilated Bench - operator applies
4 (7.4)	material to Assembly.
5	(7.3) Ventilated Bench - operator stores
6	assembly in order to preset (~ 4 hrs.).
7	(7.4) Oven - operator cures
8	assembly in oven (~ 2 hrs.).
9	
10	

☐ Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Assembly Bonding

Work area Assembly

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance ¹	Average Length of Exposure Per Day ²	Number of Days per Year Exposed
<u>A</u>	<u>1</u>	<u>Inhalation</u>	<u>OL</u>	<u>E</u>	<u>14</u>
<u>B</u>	<u>1</u>	<u>Inhalation</u>	<u>OL</u>	<u>E</u>	<u>2</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

¹Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensable at ambient temperature and pressure)
 GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)
 SO = Solid

SY = Sludge or slurry
 AL = Aqueous liquid
 OL = Organic liquid
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

²Use the following codes to designate average length of exposure per day:

A = 15 minutes or less
 B = Greater than 15 minutes, but not exceeding 1 hour
 C = Greater than one hour, but not exceeding 2 hours

D = Greater than 2 hours, but not exceeding 4 hours
 E = Greater than 4 hours, but not exceeding 8 hours
 F = Greater than 8 hours

☐ Mark (X) this box if you attach a continuation sheet.

9.07 For each labor category represented in question 9.06, indicate the 8-hour Time Weighted Average (TWA) exposure levels and the 15-minute peak exposure levels. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Assembly Bonding

Work area Assembly

Labor Category	8-hour TWA Exposure Level (ppm, mg/m ³ , other-specify)	15-Minute Peak Exposure Level (ppm, mg/m ³ , other-specify)
<u>A</u>	<u>NA</u>	<u>NA</u>
<u>B</u>	<u>NA</u>	<u>NA</u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>

☐ Mark (X) this box if you attach a continuation sheet.

PART B WORK PLACE MONITORING PROGRAM

9.08 If you monitor worker exposure to the listed substance, complete the following table

CBI

☐

Sample/Test	Work Area ID	Testing Frequency (per year)	Number of Samples (per test)	Who Samples ¹	Analyzed In-House (Y/N)	Number of Years Records Maintained
Personal breathing zone	NA	NA	NA	A	N	Indef
General work area (air)	NA	NA	NA	A	N	Indef
Wipe samples	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}
Adhesive patches	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}
Blood samples	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}
Urine samples	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}
Respiratory samples	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}
Allergy tests	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}
Other (specify)						
	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}
Other (specify)	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}
Other (specify)	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}	NA _{pp}

¹Use the following codes to designate who takes the monitoring samples:

A = Plant industrial hygienist

B = Insurance carrier

C = OSHA consultant

D = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

9.09 For each sample type identified in question 9.08, describe the type of sampling and analytical methodology used for each type of sample.

☐ Sample Type Sampling and Analytical Methodology

NA	NA

9.10 If you conduct personal and/or ambient air monitoring for the listed substance, specify the following information for each equipment type used.

CBI

<input type="checkbox"/> <u>Equipment Type</u> ¹	<u>Detection Limit</u> ²	<u>Manufacturer</u>	<u>Averaging Time (hr)</u>	<u>Model Number</u>
D	0.007A	Gilian	<7 hr.	HFS 113A

¹Use the following codes to designate personal air monitoring equipment types:

A = Passive dosimeter

B = Detector tube

C = Charcoal filtration tube with pump

D = Other (specify) NIOSH 141

Use the following codes to designate ambient air monitoring equipment types:

E = Stationary monitors located within work area

F = Stationary monitors located within facility

G = Stationary monitors located at plant boundary

H = Mobile monitoring equipment (specify)

I = Other (specify)

²Use the following codes to designate detection limit units:

A = ppm

B = Fibers/cubic centimeter (f/cc)

C = Micrograms/cubic meter (μm^3)

☐ Mark (X) this box if you attach a continuation sheet.

9.11 If you conduct routine medical tests for monitoring the health effects of exposure to the listed substance, specify the type and frequency of the tests.

CBI

☐

Test Description

Frequency
(weekly, monthly, yearly, etc.)

Not Applicable

Not Applicable

☐ Mark (X) this box if you attach a continuation sheet.

PART C ENGINEERING CONTROLS

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Assembly Bonding

Work area Assembly

<u>Engineering Controls</u>	<u>Used (Y/N)</u>	<u>Year Installed</u>	<u>Upgraded (Y/N)</u>	<u>Year Upgraded</u>
Ventilation:				
Local exhaust	<u>Y</u>	<u>UK</u>	<u>UK</u>	<u>UK</u>
General dilution	<u>Not App.</u>	<u>Not App.</u>	<u>Not App.</u>	<u>Not App.</u>
Other (specify) _____	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Vessel emission controls	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Mechanical loading or packaging equipment	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Other (specify) _____	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>

☐ Mark (X) this box if you attach a continuation sheet.

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Assembly Bonding

Work area Assembly

Equipment or Process Modification	Reduction in Worker Exposure Per Year (%)
NA	NA

☐ Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

- 9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Assembly Bonding
Work area Assembly

<u>Equipment Types</u>	<u>Wear or Use (Y/N)</u>
Respirators	<u>N</u>
Safety goggles/glasses	<u>Y</u>
Face shields	<u>N</u>
Coveralls	<u>N</u>
Bib aprons	<u>N</u>
Chemical-resistant gloves	<u>Y</u>
Other (specify)	
_____	NA
_____	NA

☐ Mark (X) this box if you attach a continuation sheet.

9.15 If workers use respirators when working with the listed substance, specify for each process type, the work areas where the respirators are used, the type of respirators used, the average usage, whether or not the respirators were fit tested, and the type and frequency of the fit tests. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type Not Applicable

<u>Work Area</u>	<u>Respirator Type</u>	<u>Average Usage¹</u>	<u>Fit Tested (Y/N)</u>	<u>Type of Fit Test²</u>	<u>Frequency of Fit Tests (per year)</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

¹Use the following codes to designate average usage:

A = Daily

B = Weekly

C = Monthly

D = Once a year

E = Other (specify) _____

²Use the following codes to designate the type of fit test:

QL = Qualitative

QT = Quantitative

☐ Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI



Process type Assembly Bonding

Work area Assembly

All employees are trained in the use
of chemicals as part of our compliance
with OSHA 1910.1200.

- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type Assembly Bonding

Work area Assembly

<u>Housekeeping Tasks</u>	<u>Less Than Once Per Day</u>	<u>1-2 Times Per Day</u>	<u>3-4 Times Per Day</u>	<u>More Than 4 Times Per Day</u>
Sweeping	_____	<u>X</u>	_____	_____
Vacuuming	_____	_____	_____	_____
Water flushing of floors	<u>X</u>	_____	_____	_____
Other (specify)	_____	_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

9.21 Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?

Routine exposure

Response Not Required for TDI

Yes 1

No 2

Emergency exposure

Yes 1

No 2

If yes, where are copies of the plan maintained?

Routine exposure: _____

Emergency exposure: _____

9.22 Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.

☒ Yes (1)

No 2

If yes, where are copies of the plan maintained? *Environmental Affairs Office*

Has this plan been coordinated with state or local government response organizations?
Circle the appropriate response.

Yes 1

☒ No (2)

9.23 Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.

Response Not Required for TDI

Plant safety specialist 1

Insurance carrier 2

OSHA consultant 3

Other (specify) _____ 4

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 10 ENVIRONMENTAL RELEASE

General Instructions:

Complete Part E (questions 10.23-10.35) for each non-routine release involving the listed substance that occurred during the reporting year. Report on all releases that are equal to or greater than the listed substance's reportable quantity value, RQ, unless the release is federally permitted as defined in 42 U.S.C. 9601, or is specifically excluded under the definition of release as defined in 40 CFR 302.3(22). Reportable quantities are codified in 40 CFR Part 302. If the listed substance is not a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and, thus, does not have an RQ, then report releases that exceed 2,270 kg. If such a substance however, is designated as a CERCLA hazardous substance, then report those releases that are equal to or greater than the RQ. The facility may have answered these questions or similar questions under the Agency's Accidental Release Information Program and may already have this information readily available. Assign a number to each release and use this number throughout this part to identify the release. Releases over more than a 24-hour period are not single releases, i.e., the release of a chemical substance equal to or greater than an RQ must be reported as a separate release for each 24-hour period the release exceeds the RQ.

For questions 10.25-10.35, answer the questions for each release identified in question 10.23. Photocopy these questions and complete them separately for each release.

PART A GENERAL INFORMATION

10.01 Where is your facility located? Circle all appropriate responses.

CBI

- ☐ Industrial area (1)
- ☒ Urban area (2)
- Residential area 3
- Agricultural area 4
- Rural area 5
- Adjacent to a park or a recreational area 6
- ☒ Within 1 mile of a navigable waterway (7)
- ☒ Within 1 mile of a school, university, hospital, or nursing home facility (8)
- Within 1 mile of a non-navigable waterway *(Presentation of Mary Academy)* 9
- Other (specify) _____ 10

☐ Mark (X) this box if you attach a continuation sheet.

10.02 Specify the exact location of your facility (from central point where process unit is located) in terms of latitude and longitude or Universal Transverse Mercader (UTM) coordinates.

Latitude 42° 44' 51"

Longitude 71° 25' 30"

UTM coordinates Zone _____, Northing _____, Easting _____

10.03 If you monitor meteorological conditions in the vicinity of your facility, provide the following information.

Average annual precipitation UK inches/year

Predominant wind direction UK

10.04 Indicate the depth to groundwater below your facility.

Depth to groundwater UK meters

10.05 For each on-site activity listed, indicate (Y/N/NA) all routine releases of the listed substance to the environment. (Refer to the instructions for a definition of CBI Y, N, and NA.)

☐ Environmental Release

On-Site Activity

Air

Water

Land

Manufacturing

NA

NA

NA

Importing

NA

NA

NA

Processing

Y

N

N

Otherwise used

NA

NA

NA

Product or residual storage

NA

NA

NA

Disposal

NA

NA

NA

Transport

NA

NA

NA

☐ Mark (X) this box if you attach a continuation sheet.

10.06 Provide the following information for the listed substance and specify the level of precision for each item. (Refer to the instructions for further explanation and an example.)

CBI

☐

Quantity discharged to the air	<u>UK</u>	kg/yr ± <u>—</u> %
Quantity discharged in wastewaters	<u>Not Applicable</u>	kg/yr ± <u>—</u> %
Quantity managed as other waste in on-site treatment, storage, or disposal units	<u>NA</u>	kg/yr ± <u>—</u> %
Quantity managed as other waste in off-site treatment, storage, or disposal units	<u>UK</u>	kg/yr ± <u>—</u> %

☐ Mark (X) this box if you attach a continuation sheet.

10.08 Describe the control technologies used to minimize release of the listed substance for each process stream containing the listed substance as identified in your process block or residual treatment block flow diagram(s). Photocopy this question and complete it separately for each process type.

CBI

☐

Process type

Assembly Bonding

<u>Stream ID Code</u>	<u>Control Technology</u>	<u>Percent Efficiency</u>
<u>7D</u>	<u>None</u>	<u>NA</u>
<u>7F</u>	<u>None</u>	<u>NA</u>
<u>7H</u>	<u>None</u>	<u>NA</u>
<u>7J</u>	<u>None</u>	<u>NA</u>

☐

Mark (X) this box if you attach a continuation sheet.

PART B RELEASE TO AIR

- 10.09 Point Source Emissions -- Identify each emission point source containing the listed substance in terms of a Stream ID Code as identified in your process block or residual treatment block flow diagram(s), and provide a description of each point source. Do not include raw material and product storage vents, or fugitive emission sources (e.g., equipment leaks). Photocopy this question and complete it separately for each process type.

CBI

☐

Process type

Assembly Bonding

Point Source
ID Code

Description of Emission Point Source

7D

Material Mixing Station Vent

7F

Parts Bonding Vent

7H

Curing Room Vent

7J

Curing Oven Vent

☐ Mark (X) this box if you attach a continuation sheet.

☐ Mark (X) this box if you attach a continuation sheet.

10.10 Emission Characteristics -- Characterize the emissions for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

☐

Point Source ID Code	Physical State ¹	Average Emissions (kg/day)	Frequency ² (days/yr)	Duration ³ (min/day)	Average Emission Factor ⁴	Maximum Emission Rate (kg/min)	Maximum Emission Rate Frequency (events/yr)	Maximum Emission Rate Duration (min/event)
7D	G	UK	UK	UK	UK	UK	UK	UK
7F	G	UK	UK	UK	UK	UK	UK	UK
7H	G	UK	UK	UK	UK	UK	UK	UK
7J	G	UK	UK	UK	UK	UK	UK	UK

¹Use the following codes to designate physical state at the point of release:
G = Gas; V = Vapor; P = Particulate; A = Aerosol; O = Other (specify) _____

²Frequency of emission at any level of emission

³Duration of emission at any level of emission

⁴Average Emission Factor -- Provide estimated (\pm 25 percent) emission factor (kg of emission per kg of production of listed substance)

10.11 Stack Parameters -- Identify the stack parameters for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

☐

Point Source ID Code	Stack Height(m)	Stack Inner Diameter (at outlet) (m)	Exhaust Temperature (°C)	Emission Exit Velocity (m/sec)	Building Height(m) ¹	Building Width(m) ²	Vent, Type ³
7D	5.5m	0.2m	UK	UK	7.3m	133.8m	V
7F	Not App.	Not App.	Not App.	Not App.	7.3m	133.8m	Not App.
7H	Not App.	Not App.	Not App.	Not App.	7.3m	133.8m	Not App.
7J	5.5m	0.1m	UK	UK	7.3m	133.8m	V

¹Height of attached or adjacent building

²Width of attached or adjacent building

³Use the following codes to designate vent type:

H = Horizontal

V = Vertical

☐ Mark (X) this box if you attach a continuation sheet.

10.12 If the listed substance is emitted in particulate form, indicate the particle size distribution for each Point Source ID Code identified in question 10.09.
Photocopy this question and complete it separately for each emission point source.

CBI

☐

Point source ID code *Not Applicable*

Size Range (microns)

Mass Fraction (% \pm % precision)

< 1

≥ 1 to < 10

≥ 10 to < 30

≥ 30 to < 50

≥ 50 to < 100

≥ 100 to < 500

≥ 500

Total = 100%

☐ Mark (X) this box if you attach a continuation sheet.

PART C FUGITIVE EMISSIONS

10.13 Equipment Leaks -- Complete the following table by providing the number of equipment types listed which are exposed to the listed substance and which are in service according to the specified weight percent of the listed substance passing through the component. Do this for each process type identified in your process block or residual treatment block flow diagram(s). Do not include equipment types that are not exposed to the listed substance. If this is a batch or intermittently operated process, give an overall percentage of time per year that the process type is exposed to the listed substance. Photocopy this question and complete it separately for each process type.

CBI ☐ Process type Not Applicable - Manual Assembly Process
 Percentage of time per year that the listed substance is exposed to this process type %

Equipment Type	Number of Components in Service by Weight Percent of Listed Substance in Process Stream					Greater than 99%
	Less than 5%	5-10%	11-25%	26-75%	76-99%	
Pump seals ¹						
Packed						
Mechanical						
Double mechanical ²						
Compressor seals ¹						
Flanges						
Valves						
Gas ³						
Liquid						
Pressure relief devices ⁴ (Gas or vapor only)						
Sample connections						
Gas						
Liquid						
Open-ended lines ⁵ (e.g., purge, vent)						
Gas						
Liquid						

¹List the number of pump and compressor seals, rather than the number of pumps or compressors

10.13 continued on next page

☐ Mark (X) this box if you attach a continuation sheet.

10.13 (continued)

²If double mechanical seals are operated with the barrier (B) fluid at a pressure greater than the pump stuffing box pressure and/or equipped with a sensor (S) that will detect failure of the seal system, the barrier fluid system, or both, indicate with a "B" and/or an "S", respectively

³Conditions existing in the valve during normal operation

⁴Report all pressure relief devices in service, including those equipped with control devices

⁵Lines closed during normal operation that would be used during maintenance operations

10.14 Pressure Relief Devices with Controls -- Complete the following table for those pressure relief devices identified in 10.13 to indicate which pressure relief devices in service are controlled. If a pressure relief device is not controlled, enter "None" under column c.

CBI

☐

Not Applicable

a. Number of Pressure Relief Devices	b. Percent Chemical in Vessel ¹	c. Control Device	d. Estimated Control Efficiency ²
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

¹Refer to the table in question 10.13 and record the percent range given under the heading entitled "Number of Components in Service by Weight Percent of Listed Substance" (e.g., <5%, 5-10%, 11-25%, etc.)

²The EPA assigns a control efficiency of 100 percent for equipment leaks controlled with rupture discs under normal operating conditions. The EPA assigns a control efficiency of 98 percent for emissions routed to a flare under normal operating conditions

☐ Mark (X) this box if you attach a continuation sheet.

10.15 Equipment Leak Detection -- If a formal leak detection and repair program is in place, complete the following table regarding those leak detection and repair procedures. Photocopy this question and complete it separately for each process type.

CBI

Not Applicable

☐ Process type

Equipment Type	Leak Detection	Detection Device ¹	Frequency of Leak Detection (per year)	Repairs Initiated (days after detection)	Repairs Completed (days after initiated)
	Concentration (ppm or mg/m ³) Measured at _____ Inches from Source				
Pump seals					
Packed	_____	_____	_____	_____	_____
Mechanical	_____	_____	_____	_____	_____
Double mechanical	_____	_____	_____	_____	_____
Compressor seals	_____	_____	_____	_____	_____
Flanges	_____	_____	_____	_____	_____
Valves					
Gas	_____	_____	_____	_____	_____
Liquid	_____	_____	_____	_____	_____
Pressure relief devices (gas or vapor only)	_____	_____	_____	_____	_____
Sample connections					
Gas	_____	_____	_____	_____	_____
Liquid	_____	_____	_____	_____	_____
Open-ended lines					
Gas	_____	_____	_____	_____	_____
Liquid	_____	_____	_____	_____	_____

¹Use the following codes to designate detection device:

POVA = Portable organic vapor analyzer

FPM = Fixed point monitoring

0 = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

☐ Mark (X) this box if you attach a continuation sheet.

- 10.16 Raw Material, Intermediate and Product Storage Emissions - - Complete the following table by providing the information on each liquid raw material, intermediate, and product storage vessel containing the listed substance as identified in your process block or residual treatment block flow diagram(s).

CBI

Not Applicable

☐

Vessel Type ¹	Floating Roof Seals ²	Composition of Stored Materials ³	Throughput (liters per year)	Vessel Filling Rate (gpm)	Vessel Filling Duration (min)	Vessel Inner Diameter (m)	Vessel Height (m)	Vessel Volume (l)	Vessel Emission Controls ⁴	Design Flow Rate ⁵	Vent Diameter (cm)	Control Efficiency (%)	Basis for Estimate ⁶

¹Use the following codes to designate vessel type:

- F = Fixed roof
- CTF = Contact internal floating roof
- NCIF = Noncontact internal floating roof
- EFR = External floating roof
- P = Pressure vessel (indicate pressure rating)
- H = Horizontal
- U = Underground

²Use the following codes to designate floating roof seals:

- MS1 = Mechanical shoe, primary
- MS2 = Shoe-mounted secondary
- MS2R = Rim-mounted, secondary
- LM1 = Liquid-mounted resilient filled seal, primary
- LM2 = Rim-mounted shield
- LMW = Weather shield
- VM1 = Vapor mounted resilient filled seal, primary
- VM2 = Rim-mounted secondary
- VMW = Weather shield

³Indicate weight percent of the listed substance. Include the total volatile organic content in parenthesis

⁴Other than floating roofs

⁵Gas/vapor flow rate the emission control device was designed to handle (specify flow rate units)

⁶Use the following codes to designate basis for estimate of control efficiency:

- C = Calculations
- S = Sampling

PART E NON-ROUTINE RELEASES

Not Applicable

10.23 Indicate the date and time when the release occurred and when the release ceased or was stopped. If there were more than six releases, attach a continuation sheet and list all releases.

<u>Release</u>	<u>Date Started</u>	<u>Time (am/pm)</u>	<u>Date Stopped</u>	<u>Time (am/pm)</u>
<u>1</u>	_____	_____	_____	_____
<u>2</u>	_____	_____	_____	_____
<u>3</u>	_____	_____	_____	_____
<u>4</u>	_____	_____	_____	_____
<u>5</u>	_____	_____	_____	_____
<u>6</u>	_____	_____	_____	_____

10.24 Specify the weather conditions at the time of each release.

Response Not Required for TDI

<u>Release</u>	<u>Wind Speed (km/hr)</u>	<u>Wind Direction</u>	<u>Humidity (%)</u>	<u>Temperature (°C)</u>	<u>Precipitation (Y/N)</u>
<u>1</u>	_____	_____	_____	_____	_____
<u>2</u>	_____	_____	_____	_____	_____
<u>3</u>	_____	_____	_____	_____	_____
<u>4</u>	_____	_____	_____	_____	_____
<u>5</u>	_____	_____	_____	_____	_____
<u>6</u>	_____	_____	_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.